



December 2, 2011

10 CFR 50.73

Docket No. 50-443

SBK-L-11231

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Seabrook Station

Licensee Event Report (LER) 2011-002-00

Automatic Reactor Trip Following Loss of Main Feed Pump

Enclosed is Licensee Event Report (LER) 2011-002-00. This LER reports an event that occurred at Seabrook Station on October 6, 2011. This event is being reported pursuant to the requirements of 10 CFR 50.73(a)(2)(iv)(A).

Should you require further information regarding this matter, please contact Mr. Michael O'Keefe, Licensing Manager, at (603) 773-7745.

Sincerely,

NextEra Energy Seabrook, LLC

A handwritten signature in black ink, appearing to read "Paul Freeman".

Paul Freeman
Site Vice President

cc: NRC Region I Administrator
G. E. Miller, NRC Project Manager
W. J. Raymond, NRC Senior Resident Inspector

Handwritten initials "JED" and "KRL" in black ink.

NRC FORM 366 (10-2010)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB: NO. 3150-0104		EXPIRES: 10/31/2013	
LICENSEE EVENT REPORT (LER)							
1. FACILITY NAME Seabrook Station				2. DOCKET NUMBER 05000443		3. PAGE 1 OF 3	
4. TITLE Automatic Reactor Trip Following Loss of Main Feed Pump							
5. EVENT DATE			6. LER NUMBER			7. REPORT DATE	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY
10	06	2011	2011	- 002	- 00	12	02
8. OTHER FACILITIES INVOLVED							
FACILITY NAME				DOCKET NUMBER			
FACILITY NAME				DOCKET NUMBER			
9. OPERATING MODE 1		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)					
10. POWER LEVEL 100%		<input type="checkbox"/> 20.2201(b)		<input type="checkbox"/> 20.2203(a)(3)(i)		<input type="checkbox"/> 50.73(a)(2)(i)(C)	
		<input type="checkbox"/> 20.2201(d)		<input type="checkbox"/> 20.2203(a)(3)(ii)		<input type="checkbox"/> 50.73(a)(2)(ii)(A)	
		<input type="checkbox"/> 20.2203(a)(1)		<input type="checkbox"/> 20.2203(a)(4)		<input type="checkbox"/> 50.73(a)(2)(ii)(B)	
		<input type="checkbox"/> 20.2203(a)(2)(i)		<input type="checkbox"/> 50.36(c)(1)(i)(A)		<input type="checkbox"/> 50.73(a)(2)(iii)	
		<input type="checkbox"/> 20.2203(a)(2)(ii)		<input type="checkbox"/> 50.36(c)(1)(ii)(A)		<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	
		<input type="checkbox"/> 20.2203(a)(2)(iii)		<input type="checkbox"/> 50.36(c)(2)		<input type="checkbox"/> 50.73(a)(2)(v)(A)	
<input type="checkbox"/> 20.2203(a)(2)(iv)		<input type="checkbox"/> 50.46(a)(3)(ii)		<input type="checkbox"/> 50.73(a)(2)(v)(B)		<input type="checkbox"/> 50.73(a)(2)(vii)(A)	
<input type="checkbox"/> 20.2203(a)(2)(v)		<input type="checkbox"/> 50.73(a)(2)(i)(A)		<input type="checkbox"/> 50.73(a)(2)(v)(C)		<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.2203(a)(2)(vi)		<input type="checkbox"/> 50.73(a)(2)(i)(B)		<input type="checkbox"/> 50.73(a)(2)(v)(D)		<input type="checkbox"/> 50.73(a)(2)(ix)(A)	
						<input type="checkbox"/> 50.73(a)(2)(x)	
						<input type="checkbox"/> 73.71(a)(4)	
						<input type="checkbox"/> 73.71(a)(5)	
						<input type="checkbox"/> OTHER	
Specify in Abstract below or in NRC Form 366A							
12. LICENSEE CONTACT FOR THIS LER							
NAME Michael O'Keefe, Licensing Manager						TELEPHONE NUMBER (Include Area Code) 603-773-7745	
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT							
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT
14. SUPPLEMENTAL REPORT EXPECTED					15. EXPECTED SUBMISSION DATE		
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)					<input checked="" type="checkbox"/> NO		
					MONTH	DAY	YEAR
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)							
<p>At approximately 1226 on October 6, 2011 with the plant operating in Mode 1 at 100% power, Seabrook experienced a plant trip on low steam generator water levels following loss of an operating main feed pump. The main feed pump tripped on low suction pressure while restoring a condensate pump to service following maintenance. During restoration of the pump, air entered the condensate system and caused a drop in condensate pump discharge pressure, which resulted in a low pressure condition at the suction of the main feed pump. The trip of the main feed pump on low suction pressure initiated a turbine setback; however, with reduced feedwater flow, steam generator levels decreased to the low level reactor trip setpoint. The automatic systems functioned as designed. The emergency feedwater system automatically actuated and recovered steam generator levels. No adverse consequences resulted from this event.</p> <p>The cause of this event was the lack of a procedure for restoring a condensate pump to service during operation at power. The corrective action revised the operating procedure to provide instructions for filling and venting a condensate pump following maintenance.</p>							

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER	3. PAGE						
Seabrook Station	05000443	<table border="1"><tr><th data-bbox="997 247 1073 275">YEAR</th><th data-bbox="1073 247 1224 275">SEQUENTIAL NUMBER</th><th data-bbox="1224 247 1320 275">REVISION NUMBER</th></tr><tr><td data-bbox="997 275 1073 338">2011</td><td data-bbox="1073 275 1224 338">- 002</td><td data-bbox="1224 275 1320 338">- 00</td></tr></table>	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2011	- 002	- 00	Page 2 of 3
YEAR	SEQUENTIAL NUMBER	REVISION NUMBER							
2011	- 002	- 00							

NARRATIVE

Description of Event

At approximately 1226 on October 6, 2011 with the plant operating in Mode 1 at 100% power, Seabrook experienced a plant trip on low steam generator [AB, SG] water levels following loss of an operating main feed pump [SJ, P]. The main feed pump tripped on low suction pressure while restoring a condensate pump [SD, P] to service following maintenance. During restoration of the pump, air entered the condensate system and caused a drop in condensate pump discharge pressure, which resulted in a low pressure condition at the suction of the main feed pump. The trip of the main feed pump on low suction pressure initiated a turbine [TA, TRB] setback; however, with reduced feedwater flow, steam generator levels decreased to the low level reactor trip setpoint. The automatic systems functioned as designed. The emergency feedwater [BA] system automatically actuated and recovered steam generator levels.

Cause of Event

The root cause of the air intrusion into the condensate system, which resulted in a trip of the main feed pump and the subsequent reactor trip, was the lack of a procedure for restoring a condensate pump to service during operation at power.

Analysis of Event

The condensate system includes three fifty percent capacity condensate pumps with two pumps in service during normal operation. Two fifty percent capacity turbine-driven main feed pumps receive water from the condensate system and deliver water to the steam generators. The main feed pumps are provided with an automatic trip on low suction pressure.

The plant trip occurred during restoration of a condensate pump, which had been removed from service for replacement of the rotating element. During venting of the condensate pump, air intrusion into the operating condensate pumps caused a sharp drop in discharge pressure and large flow oscillations. The pressure drop exceeded the main feed pump low suction pressure trip setpoint, and the trip of the feed pump initiated a turbine setback. In response to lowering steam generator levels as a result of the setback, the Unit Shift Supervisor directed a manual reactor trip; however, an automatic reactor trip actuated on low steam generator levels before the operators initiated a manual trip. The emergency feedwater system automatically actuated and recovered steam generator levels.

This event resulted in a valid actuation of the reactor protection system and met the reporting criteria of 10 CFR 50.72(b)(2)(iv)(B) and 10 CFR 50.72 (b)(3)(iv)(A). A four hour report was made to the NRC at approximately 1517 on October 6, 2011 (event number 47327). This event is of regulatory significance because it resulted in actuation of a system provided to mitigate the consequences of an accident. This event had no adverse impact on the plant or on the health and safety of the public because any failure in the non-safety class portion of the condensate and feedwater systems has no effect on the safety of the reactor. No inoperable structures, systems, or components contributed to this event. This condition did not involve a safety system functional failure.

Corrective Actions

The corrective action for the root cause of this event revised the operating procedure to provide instructions for filling and venting a condensate pump following maintenance.

Additional Information

The Energy Industry Identification System (EII) codes are included in this LER in the following format: [EII system identifier, EII component identifier].

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Seabrook Station	05000443	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	Page 3 of 3
		2011	- 002	- 00	

NARRATIVE

Similar Events

LER 2005-005 reported a similar condition that resulted in a valid actuation of the reactor protection system (RPS) while the plant was shutdown. This LER reported an actuation of the RPS on low steam generator water level as the result of a procedure deficiency.